



CTGGCTAGCC	TCACTTGGTA	GACAGCCCTG	ACAGCCCTAC	TGGCTGGGGG	TGGAAAGGCC	AGTCAATATC	TTGGTCACTG	80
CTAATAGTTC	CTTGCTAGCC	GCAAAAAGCT	CCTTGCCGAA	GGGGCACAGA	CTATCAAGTG	AGACATATAG	GATGCATGTC	160
TTTCATAGCC	ACAGTTAGGG	TGGTGACCTA	CTCGAAGAGG	CCCGACTTGG	CATGCATACG	ACATGTGCGT	TCCATGCAAC	240
ATGTATGCGC	ACATCGGCGA	TCAGGCACCC	TCTGATGCA	GAATAGAACC	CCCTTGGTTT	CTTTTGTGTT	CTTTTCTTTT	320
CTCAACGACG	CGTGAGCGTG	GTTAACTTGA	GCAAGGCCGA	GTGGTCTGTT	CACGAGGTTA	CCATCGAACT	CTCTTCTTTC	400
CCAATCATGA	CCTGCCCCCC	GAGTTTAGCC	CCCATCAOAG	CTGTGAAATC	CACCTTGATA	ATCCTAGCCT	AGTGCTACTC	480
TTCAATAGTT	GCTCCTGATG	GGGCACTTTG	GTACACATTG	CCTGGTTFYCT	CCTACCTCGT	TCTCTTCGCG	ATCAAGCCTC	560
TATGCCCCGAC	GACAACACCT	CATTGGCCCC	GACCACTTTG	AGCGCGCAGG	CACCTTCGCG	CCGAAGGAGT	TGATAACACC	640
CTTCACCCCT	GCCCCAATGAT	GGAGTTTGTG	TCTATTTGTC	ATGATCACTT	CACATTCACT	AGATCAACGA	TCCTGGAAGA	720
GGGTGTGGAA	GCCAGAACAG	CTTGTCCTCG	TTCTTGCGAG	CTCAGGTCAG	CTCCTAGCGG	CTATCACAGC	TCAGGATTAT	800
CAAGTCCCGT	AAAGTCCAGA	CCCTTTTTCAT	TGTATGATGC	TGCTTAATTT	GCGCTATCTC	TATGCGGTAG	CAGCCGTCTT	880
GGCTACAACCT	GGCTGCCATG	GCTGAAGCAT	CGTGAGATCT	ATAAAGGTCT	CCGAATCCTC	GGTGAAGTCA	GAATCGTCTC	960
TCCACACCAG	TCAACAACAA	GCTTCTTTTCT	CTTACAGCTT	AGCCTGAGCA	CATTACACAG	ACTCTTCCCT	TCTTTTTCGTC	1040
AATATGCTGT	TCAAGTCAATG	GCAACTGGCA	GCAGCCCTCG	GGCTCCTGTC	TGGAGTCCCT	GGCATCCCGA	TGGACACCGG	1120
CAGCCACCCC	ATTGAGGCTG	TTGATCCCGA	AGTGAAGACT	GAGGTCTTGG	CTGACTCCCT	CCTTGCTGCA	GCAGGCGATG	1200
ACGACTGGGA	GTACACCTCCA	TACAACCTTG	TTTACAGGTG	AGACACCTGT	CCCACCTGTT	TTCCCTCGAT	AACTAACTCT	1280
TATAGGAATG	CCCTGCCAAT	TCCACCTGTC	AAGCAGCCCA	AGATGTATGT	CTTTGATTTT	CTACGAAGCA	ACTCGGCCCC	1360
GACTAATGTA	TTCTAGGATC	ATTACCAACC	CTGTCAOCCG	CAAGGACATT	TGGTACTATG	AGATCGAGAT	CAAGCCATTT	1440
CAGCAAAGGG	TGAGTTTGTCT	CAGAAACCTT	GTGGTAAATTA	ATCATTTGTTA	CTGACCCCTT	CAGATTTACC	CCACCTTGCG	1520
CCCTGCCACT	CTCGTCGGCT	ACGATGGCAT	GAGCCCTGGT	CCTACTTTTCA	ATGTTCCAG	AGGAACAGAG	ACTGTAGTTA	1600
GGTTTCATCAA	CAATTGCCACC	GTGGAGAATC	CGGTCCATCT	GCACGGCTCC	CCATCGCGTG	CCCTTTTCGA	TGGTTGGGCT	1680
GAAGATGTGA	CCTTCCCTGG	CGAGTACAAG	GATTACTACT	TTCCCAACTA	CCAATCCGCC	CGCCTTCTGT	GGTACCATGA	1760
CCACGCTTTC	ATGAAGGTAT	GCTACGAGCC	TTTATCTTTC	TTGGCTTACT	TTGGCTTAAC	AACTTCTTTC	CGTAGACTGC	1840
TGAGAATGCC	TACTTTGGTC	AGGCTGGGCG	CTACATTTATC	AACGACGAGG	CTGAGGATGC	TCTCGGTCTT	CCTAGTGGCT	1920
ATGGCGAGTT	CGATATCCCT	CTGATCCTGA	CGGCCAAGTA	CTATAACGCC	GATGGTACCC	TGCGTTTCGAC	CGAGGGTGAG	2000
GACCAGGACC	TGTGGGGAGA	TGTATCCAT	GTCAACGGAC	AGCCATGGCC	TTTCTTTAAC	GTCCAGCCCC	GCAAGTACCG	2080
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CTTTCCAAGT	CATTGCCCTCT	GATGCTGGTC	TCCTTCAAGC	CCCGTTTCAG	ACCTCTAAC	TCTACCTTGC	TGTTGCCGAG	2240
CGTTACGAGA	TCATTATTGG	TATGCCCTCC	CCTCTCACGA	ATGAGTCAAG	AACTCTAAGA	CTAACACTTG	TAGACTTCAC	2320
CAACTTTGCT	GGCCAGACTC	TTGACCTGCG	CAACGTTGCT	GAGACCAACG	ATGTCCGGCG	CGAGGATGAG	TACGCTCGCA	2400
CTCTCGAGGT	GATGCGCTTC	GTGCTCAGCT	CTGGCACTGT	TGAGGACAAC	AGCCAGGTCC	CCTCCACTCT	CCGTGACGTT	2480
CCTTTCCCTC	CTCACAAGGA	AGGCCCCGCC	GACAAGCACT	TCAAGTTTGA	ACGCAGCAAC	GGACACTACC	TGATCAACGA	2560
TGTTGGCTTT	GCCGATGTCA	ATGAGCGTGT	CCTGGCCAAG	CCCGAGCTCG	GCACCGTTGA	GGTCTGGGAG	CTCGAGAACT	2640
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GTCAATGCCCT	ACGAGTCTCG	TGGTCTTTAAG	GATGTCTGCT	GGTTGGGCAG	GGGTGAGACC	CTGACCATCG	AGGCCCACTA	2800
CCAACCCCTG	ACTGGAGCTT	ACATGTGGCA	CTGTACAAC	CTCAITCAGG	AGGATAACGA	CATGATGGCT	GTATTCAACG	2880
TCACCGCCAT	GGAGGAGAAG	GGATATCTTC	AGGAGGACTT	CGAGGACCCC	ATGAACCCCA	AGTGGCGCGC	CGTTCCCTTAC	2960
AACCGCAACG	ACTTCCATGC	TGCGCGCTGA	AACCTTCTCG	CCGAGTCCAT	CATGCCCCGA	GTGCAGGAGC	TGGCCGAGCA	3040
GGAGCGGTAC	AACCGCCTCG	ATGAGATCCT	GGAGGATCTT	GGAATCGAGG	AGTAAACCCC	GAGCCACAAG	CTCTACAATC	3120
GTTTTGAGTC	TTAAGACGAG	GCTCTTGGTG	CGTATTTCTT	TCTTCCCTAC	GGGGAACTCC	GCTGTCCACT	GCGATGTGAA	3200
GGACCATCAC	AAAGCAACGT	ATATATTGGA	CTCACCCTG	TCATTACCGC	CCACTTGTAC	CTATTGCAAT	CTTGTTCAAA	3280
CTTTTCTAGT	GCGAGAGTGT	CCATAGTCAA	GAAACGCCCA	TAGGGCTATC	GTCTAAACTG	AACTATTGTG	TGGTCTGTGA	3360
CGTGGAGTAG	ATGTCAATTG	TGATGAGACA	CAGTAAATAC	GGTATATCTT	TTCTTAGGAC	TACAGGATCA	GTTTCTCATG	3440
AGATTACATC	CGTCTAATGT	TTGTCCATGA	GAGTCTAGCT	AAGGTTGAGA	ATGCATCAGA	CGGAATCATT	TGATGCTCTC	3520
AGCTCGTATT	ACCGATGTAA	GACAAGTTAG	GTAAGTTGCT	TGGTATCCGA	AAATGACTCA	GGCTCCCTCA	TTAGGTTTGA	3600
TGTGAAAACC	TTACAGCACT	CATGGGTGTT	GGGACCAAT	CATCCATACC	TGATTTTGAT	AACTGACCTG	GGTCAAT	3677

Figure 2

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1 .....MFKHTLGAAALSLFNSNAVQA.SVPETSPATGHLEKRV 39
      |         |         |         |         |
1 MLFKSWQLAAASGLLSGVLGIPMDTGSHPIEAVDPEVKTEVFADSLAAA 50

40 AQISPOYFMFTV....PLPIPPVKQPRLTVINPVNGQETWYYEVEIKPFT 85
      |         |||||         |||         |||         |||
51 GDDWESPPYNLLYRNALPIPPVKQPKMITINPVITGKDIWYYEIEIKPFQ 100

86 HQVYPDLGSADLVGYDGMSPGPTFQVPRGVEIVWRFINNAEAPNSVHLHG 135
      || | | |||||         |||         |||||         |||||
101 QRIYPTLRPATLVGYDGMSPGPTFNVPRGIEIVWRFINNATVENSVHLHG 150

136 SFSRAAFDGAEDITEPGSFKDYYPNRQSARTLWYHDHAMHTTAENAYR 185
      | ||| |||||         | | |||         |||         |||||
151 SPSRAPFDGAEDVTFRGEYKDYFVNYQSARLLWYHDHAFMKTAEAYF 200

186 GQAGLYMLTDPADALNLP SGYGEFDIPMILTSKQYTANGNLVTINGELN 235
      |||| | | |||||         |||||         |||         | | |||
201 GQAGAYIINDEAEDALGLPSGYGEFDIPLILITAKYYNADGTLRSTEGEDQ 250

236 SFWGDVIHVNGQPWPFFKNVEPRKYRFRFLDAAVSRSGLYFADIDAIDTR 285
      |||||         |||         |||||         |||||         | |
251 DLWGDVIHVNGQPWPFILNVQPRKYRFRFLNAAVSRALLYLVRTSSPNVR 300

286 LPFKVIASDSGLLEHPADTSLLYISMAERYEVVDFSDYAGKTIELRNLG 335
      || |||||         | | |||         |||||         || | |||
301 IPFQVIASDAGLLQAPVQTSNLYLAVAERYEIIIDFINFAGQILDLRNV. 349

336 GSIGGIGTDTDYDNDKVMRFWADDITQPDTSVVPANLRDVFPSPPTIN 385
      | | | | |||||         | | | | |||||
350 AETNDVGDEDEYARTILEVMRFVSSGIVE.DNSQVPSTLRDVFPFPHKEG 398

386 .TPRQFRFRGTGPTWTINGVAFADVQNRLLANVPVGIVERWELINAGNGW 434
      | | | | |||         | | |||         |||         |||
399 PADKHFKFERSNGHYLINDVGFADVNERVLAKPELGIVEWELENSSGGW 448

435 THPIHIHLVDFKVISRTSGNNARTVMPIYES.GLKDVVWLGRRETWVEAH 483
      || |||||         || | |||||         |||||         |||
449 SHPVHIHLVDFKILKRTGGRG..QVMPYESAGLKDVVWLGRGETILTTEAH 496

484 YAPFPGVYMFHCHNLIHEDHDMMAAFNATVLPDYGYNATVFVDPMEELWQ 533
      | | | | |||||         |||         || | |||         |
497 YQFWTGAYMWHCHNLIHEDNDMAVFNVTAMEEKGYLQEDFEDFNNPKWR 546

534 ARPYELGEFQAQSQQFSVQAVIERIQTMAEYRPYAADE..... 572
      || | | | | | | | | | | | |
547 AVPYNRNDFHARAGNFSAESITARVQELAEQEPYNRLDEILEDLGTEE 594

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Figure 3: protein sequences alignment of Bilirubin oxidase (top sequence) with Stachybotrys oxidase (bottom sequence).

Figure 3

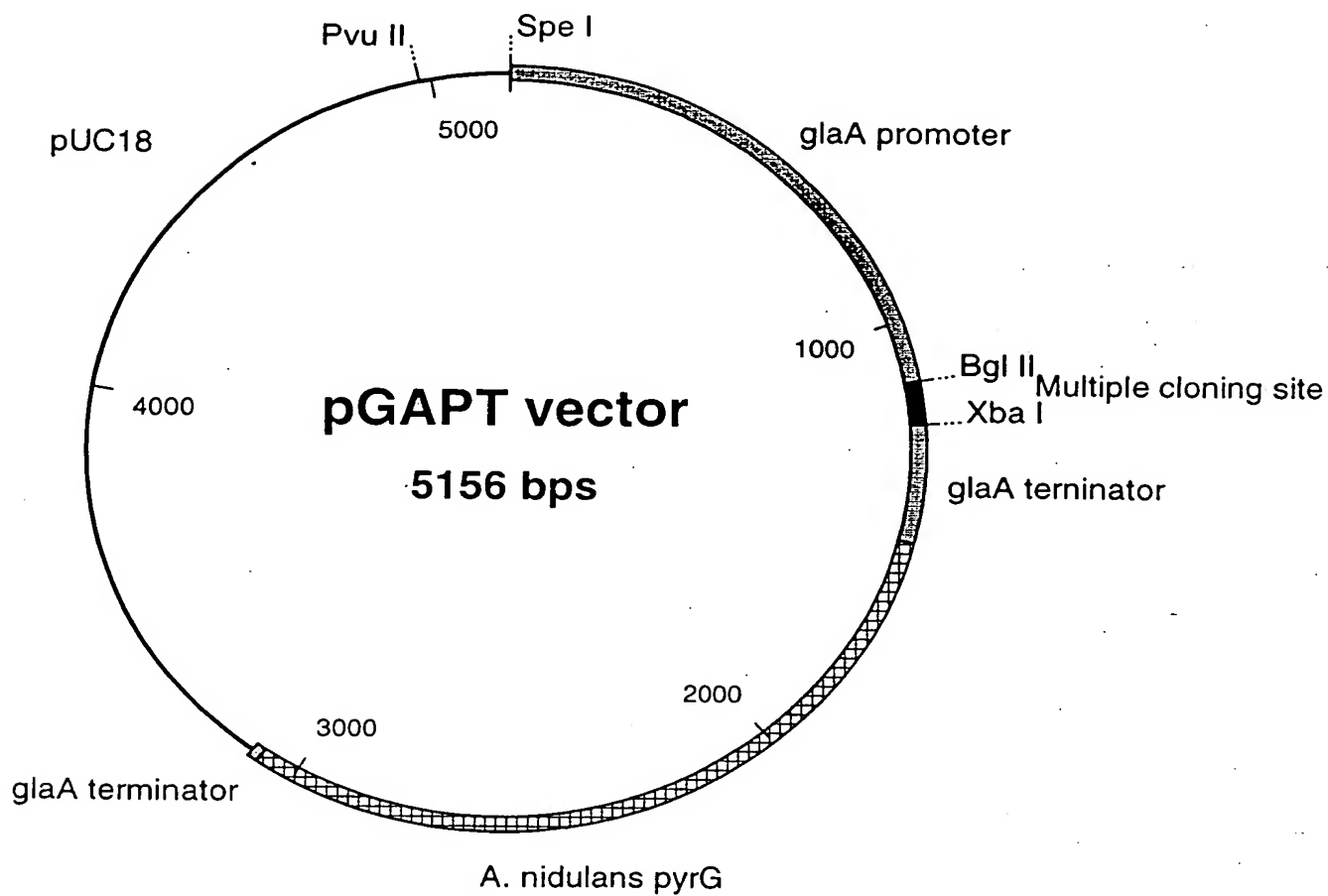


Figure 4

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 AAGACTGAGG TCTTCGCTGA CTCCCTCCTT GCTGCAGCAG GCGATGACGA CTGGGAGTCA 180  
 CCTCCATACA ACTTGCTTTA CAGGTGAGAC ACCTGTCCCA CCTGTTTTTC CTGATAACT 240  
 AACTCTTATA GGAATGCCCT GCCAATTCCA CCTGTCAAGC AGCCCAAGAT GTATGTCCTT 300  
 GATTTTCTAC GAAGCAACTC GGCCCCGACT AATGTATTCT AGGATCATTA CCAACCTGT 360  
 CACCGGCAAG GACATTGGT ACTATGAGAT CGAGATCAAG CCATTTTCAGC AAAGGGTGAG 420  
 TTTGCTCAGA AACCTTGIGG TAATTAATCA TTGTTACTGA CCCTTTTCAGA TTTACCCAC 480  
 CTTGCGCCCT GCCACTCTCG TCGGCTACGA TGGCATGAGC CCTGGTCTTA CTTTCAATGT 540  
 TCCCAGAGGA ACAGAGACTG TAGTTAGGTT CATCAACAAT GCCACCGTGG AGAACTCGGT 600  
 CCATCTGCAC GGCTCCCAT CGCGTGGCCC TTTCGATGGT TGGGCTGAAG ATGTGACCTT 660  
 CCCTGGCGAG TACAAGGATT ACTACTTTTC CAACTACCAA TCCGCCCGCC TTCTGTGGTA 720  
 CCATGACCAC GCTTTTCATGA AGGTATGCTA CGAGCCTTTA TCTTTCTTGG CTACCTTTGG 780  
 CTAACCAACT TCCTTTCTGA GACTGCTGAG AATGCCTACT TTGGTCAGGC TGGCGCCTAC 840  
 ATTATCAACG ACGAGGCTGA GGATGCTCTC GGTCCTCTTA GTGGCTATGG CGAGTTCTGAT 900  
 ATCCCTCTGA TCCTGACGGC CAAGTACTAT AACGCCGATG GTACCCCTGG TTTCGACCGAG 960  
 GGTCAGGACC AGGACCTGTG GGGAGATGTC ATCCATGTCA ACGGACAGCC ATGGCCCTTTC 1020  
 CTTAACGTCC AGCCCCGCAA GTACCGTTTC CGATTCTCA ACGCTGCCGT GTCTCGTGCT 1080  
 TGGCTCCTCT ACCTCGTCAG GACCAGCTCT CCCAACGTCA GAATTCCTTT CCAAGTCATT 1140  
 GCTCTGATG CTGGTCTCT TCAAGCCCC GTTCAGACCT CTAACCTCTA CCTTGCTGTT 1200  
 GCGAGCGTT ACGAGATCAT TATTGGTATG CCTCCCTC TCACGAATGA GTCAAGAACT 1260  
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 GCCAAGCCCG AGCTCGGCAC CGTTGAGGTC TGGGAGCTCG AGAACTCTC TGGAGGCTGG 1620  
 AGCCACCCCG TCCACATTA CCTTGTTGAC TTCAAGATCC TCAAGCGAAC TGGTGGTCTG 1680  
 GGCCAGGTCA TGCCCTACGA GTCTGCTGGT CTTAAGGATG TCGTCTGGTT GGGCAGGGGT 1740  
 GAGACCCTGA CCATCGAGGC CCACTACCAA CCCTGGACTG GAGCTTACAT GTGGCACTGT 1800  
 CACAACCTCA TTCACGAGGA TAACGACATG ATGGCTGTAT TCAACGTCAC CGCCATGGAG 1860  
 GAGAAGGGAT ATCTTCAGGA GGAATTGAG GACCCCATGA ACCCCAAGTG GCGCGCCGT 1920  
 CCTTACAACC GCAACGACTT CCATGCTCGC GCTGGAACT TCTCCGCCGA GTCCATCACT 1980  
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Figure 5

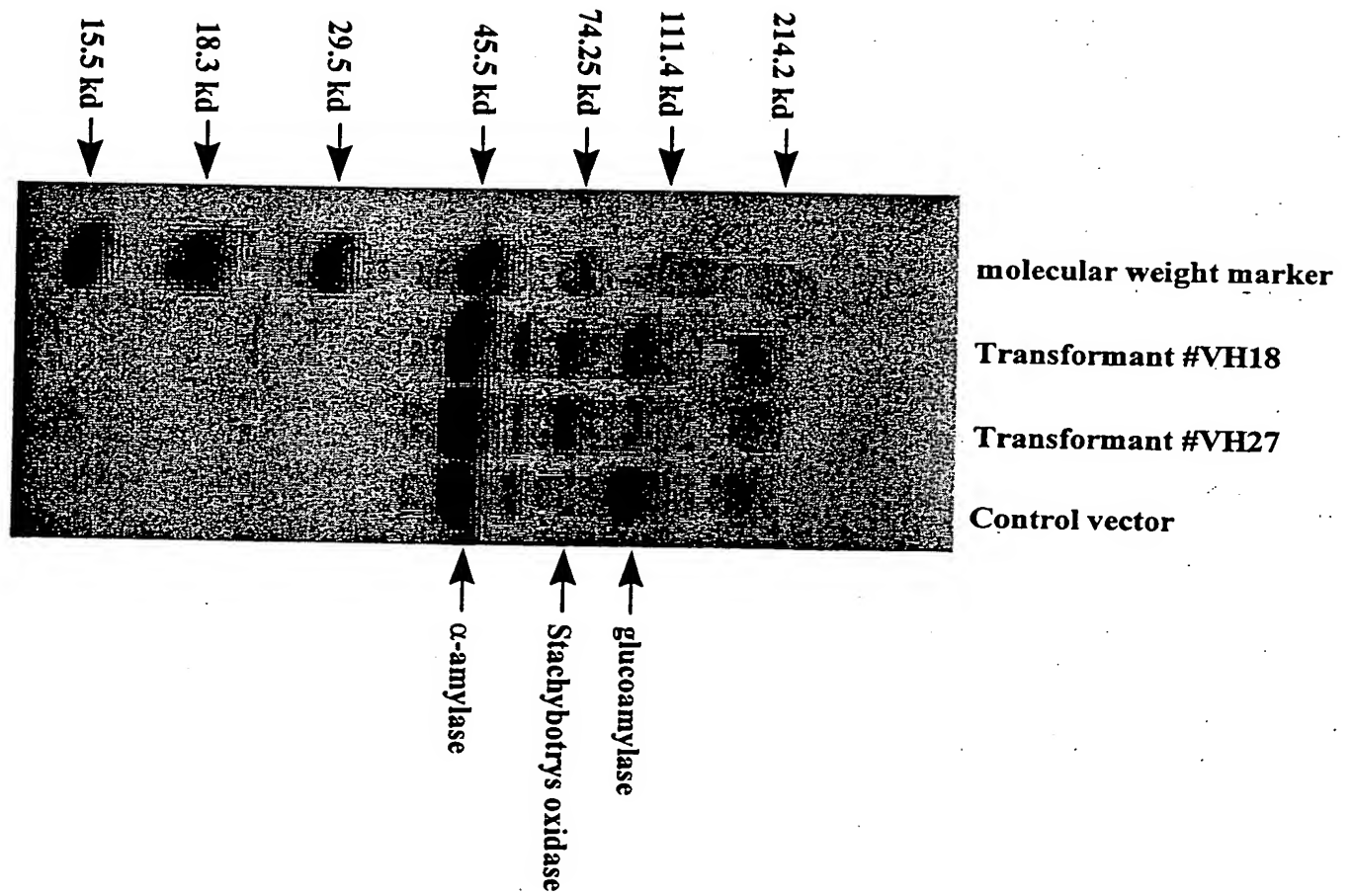


Figure 6